DOCUMENT RESUME

ED 173 012 RC 011 477

TITLE	American Indian Telecommunications Satellite Demonstration Project. Summary Report.
INSTITUTION	Lyndon B. Johnson Space Center, Houston, Tex.
SPONS AGENCY	All Indian Pueblo Council, Albuquerque, N. Mex.; Bureau of Indian Affairs (Dept. of Interior), Washington, D.C.; National Aeronautics and Space Administration, Washington, D.C.
PUB DATE	May 79
NOTE	46p.; Tables 1-3 may not reproduce well due to small print size
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*American Indians; Communication (Thought Transfer); *Communication Satellites; Education; *Feasibility Studies; *Federal Indian Relationship; Health Services; *Information Needs; Information Networks; Institutions; Media Technology; Program Effectiveness; Rural Development; *Telecommunication; Telephone Communication Systems; Television; Tribes; Video Equipment; Water Resources
IDENTIFIERS	Bureau of Indian Affairs; Crow (Tribe); National Aeronautics and Space Administration; Pueblo (People)

ABSTRACT

The technical feasibility of voice and television communication within and between tribes, between tribes and federal agencies, and between educational institutions and tribes was demonstrated by broadcasts which took place April 10, 12, and 14, 1978, with equipment located at four sites: Crow Agency, Montana; All- Indian Culture Center, New Mexico; Moffett Field, California; and Washington, D.C. Two-way interactive television with the TV signals transmitted by satellite allowed tribe members, government officials, and congressmen to see and talk with one another. The National Aeronautics and Space Administration arranged for the use of the Communications Technology Satellite and other technical equipment; the tribes otherwise planned and conducted the broadcasts which included informative presentations by representatives of government agencies, discussion between tribes and a panel of congressmen, instructional programs, and question-and-answer periods with tribes and government representatives participating. Health services, education, rural development, water rights, and the Bureau of Indian Affairs were topics of discussion. Indian groups and federal agencies must now study the possible uses, benefits, and cost effectiveness of using satellite communications to improve Indian information networks. (JH)

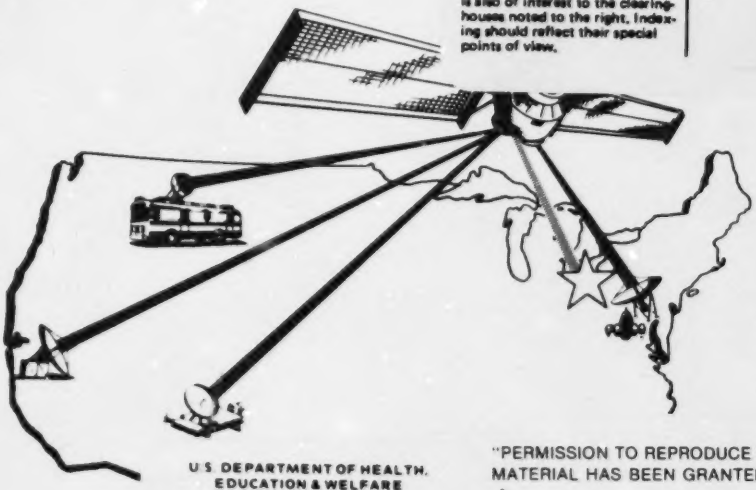
****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED173012

American Indian Telecommunications Satellite Demonstration Project

Summary Report
May 1979

SCOPE OF INTEREST NOTICE
The ERIC Facility has assigned this document for processing to: RC | IR
In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view.



U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Jerry Elliott
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

NASA
National Aeronautics and Space Administration

JUN 1979
ERIC/CRESS
RECEIVED

RC 011477

American Indian Telecommunications Satellite Demonstration Project
April 10, 12, 14, 1978

"A concerned community is one that is informed...."

Summary Report Prepared by
Lyndon B. Johnson Space Center
Houston, Texas
May 1979

Sponsored by
Crow Central Education Committee
All Indian Pueblo Council, Inc.
Bureau of Indian Affairs
U.S. Department of Interior
National Aeronautics and Space Administration

Foreword

The first practical demonstration of a satellite communications ability to provide televised conference and programming for American Indians was conducted at the Crow Agency in Montana and the All-Indian Pueblo Council, Inc., in New Mexico on April 10, 12, and 14, 1978.

The basic purpose of this project was to evaluate—through an actual demonstration—whether satellite telecommunications can provide a new and beneficial mechanism for communications applications pertaining to Indian affairs between tribes, educational institutions, and the federal government.

The tribes in Montana and New Mexico utilized the satellite to communicate with each other and with federal officials in Washington, D.C., to exchange information and views on health, agriculture, education and other tribal concerns.

Among key government figures taking part were: Alex Mercure, Assistant Secretary of the Department of Agriculture; U.S. Senators Jack Schmitt and Pete Domenici from New Mexico, Paul Hatfield from Montana, U.S. Representative Ron Marlene; Governor Thomas Judge of Montana; Special Assistant to the Vice President, Nelson Diaz; Dr. Gerald Gipp, Director, Office of Indian Education; Forrest J. Gerard, Assistant Secretary for Indian Affairs, Department of Interior; James Joseph, Deputy Secretary, Department of Interior; Dr. Gordon Law, Assistant and Science Advisor, Department of Interior; Dr. Emery Johnson, Director, Indian Health Service, Department of Health, Education, and Welfare.

This final report presents the findings of the demonstration. Not all of the evaluations from the Albuquerque site were available at the time of distribution; however, the information gathered is similar to the Crow site results.

With regard to the value of the demonstration to the Indian community, satellites may not be the total answer to their needs; but they certainly represent one of the directions which needs further exploration.

The April demonstration provided a window—however small—into a part of Indian life and affairs. With this window and resulting knowledge and understanding there may be a new and important future contribution to the progress of improving communications

JERRY ELLIOTT
PROJECT LIAISON

Contents

Foreword i
Letters of Commentary v
Abbreviations and Acronyms x
Introduction 1
Background 1
Purpose 2
Site Descriptions 3
Equipment Locations 5
Coordination Loops 7
Demonstration Ground Rules 7
Roles and Responsibilities 8
  NASA/Tribal Relationship 8
  NASA/BIA Relationship 8
  Position Descriptions 8
  Other Interfaces 9
  Program and Technical Site Staff 9
Detailed Activities 10
Supplementary Activities 23
Evaluation Plan 23
  Crow Agency, Montana 24
    Questionnaire Results 24
    Comments 27
  All Indian Pueblo Council, Inc., Albuquerque, New Mexico 28
    Comments 28
Conclusions 29
Recommendations 30
Acknowledgements 30
Appendix A - Project Team 32
Appendix B - Organizational Participation 34

page ii blank.

Sen. Jack Schmitt (NM) talks to Pueblos while Sen. Paul Hatfield (MT), Sen. Pete Domenici (NM) and Cong. Ron Marlenee (MT), look on.

Letters of Commentary

Words from the Congress ....

United States Senate

"I enjoyed the experience of trying out a new means of communicating more closely with constituents. I am sure that this process will prove to be most beneficial in the future for immediate exchange between Congress and constituents, especially since it allows people who live a great distance from the Capitol, and who may be unable to afford the time or the travel expenses to come to Washington, the opportunity to make their views known."

Sen. Paul Hatfield
Committee of the Judiciary
April 26, 1978

"... What I saw convinces me that there is a great potential to assist Indian tribes in achieving vitally needed communication.

In our work in the Committee, we are very conscious of the fact the great distances between Washington and Indian country pose real obstacles to t.. Congress and the federal government in meeting its responsibilities to Indian tribes. The problem is simple and self-evident, a lack of communication. Use of satellite communication facilities on a regular basis to overcome this obstacle cannot help but advance the legitimate interest of the tribes and assist the Congress and the federal government in meeting its responsibilities.

Application of this technology to achieve communication between tribes and the government seem entirely justified and the question simply is how and when."

Alan Parker,Chief Counsel
Select Committee on Indian Affairs
May 25, 1978

"The demonstration was a remarkable success. It showed how high technology could be brought down to the level of real human needs.

I believe we are only scratching the surface with respect to the benefits of satellite communication for all of us. It will bridge the gap between peoples who would never meet in their lifetimes otherwise.

This means better understanding of feelings, concerns and needs of others. The sooner it is made available to just about anyone, especially citizens in smaller and rural communities, the faster it will prove its value.

I look forward to continued expansion of this new technique. We need it."

Sen. Pete Domenici
Committee on Energy and National Resources
June 1, 1978

"...the teleconference with Indian communities on April 12th was a worthwhile successful exercise in utilizing recent technical developments to improve communications.

With use, communication efforts can be improved to overcome any obstacles that may be present because of the lack of face-to-face contact."

Sen. Harrison Schmitt
Committee on Commerce, Science and Transportation
June 13, 1978

House of Representatives

"After having worked in the area of Indian education for the past year, and having seen the rural, and usually isolated reservation conditions, I am most interested in seeing new approaches, such as this, explored for their potential effectiveness."

Rep. Michael T. Blouin, Chairman
Advisory Study Group on Indian Education
Committee on Education and Labor
May 26, 1978

"Because of Alaska's sparse population and vast geographic area, conventional overland communication systems are prohibitively expensive and difficult to construct in most parts of my state. If Alaskans were forced to rely on the communication systems common in the lower 48, the city dwellers would be the only Alaskans to enjoy the benefits of modern communication technology.

Thanks to satellite communication, however, even those in the most remote areas have access to electronic communication systems such as telephone and television service. Satellite communication has already been demonstrated to be of immense value in Alaska, particularly in the areas of health and education, and recent advances in satellite technology indicate a bright future of continued growth in this field.

We Alaskans look forward to this growth in satellite communication because it will bring us ir closer touch with each other and with the rest of the U.S."

Rep. Don Young
Committee ... Interior and Insular Affairs
June 1, 1978

"My personal participation in your first demonstration conducted last April clearly showed that two-way communication by satellite between federal agencies and Indian communities can be efficient and effective. Our current projections indicate there may also be potential savings or cost reductions realized if such a system were implemented for federal access."

Alex P. Mercure
Assistant Secretary for Rural Development
Department of Agriculture
October 4, 1978

"I strongly believe that a satellite communications project could benefit the Indians of the contiguous 48 states, the natives of Alaska, and the overall population of the U.S. as a whole.

It is particularly pleasing to me that the Indians are leading the way in this project that ultimately will not only benefit themselves, but also a larger parameter that includes private and public organizations alike.

(And) I have given my full support to this very worthwhile project."

Rep. Don Young
Committee on Interior and Insular Affairs
September 19, 1978

Comments of the Indian People

There is no better, more accurate source of information about an event and the people concerned with it than the recorded reactions of the people themselves. The following comments from participants and observers were received.

"We, the Crow People, are in desperate need of good communications among our far-spread districts, and with other tribes as well as state and federal agencies. Indian people everywhere can benefit from this kind of communications...."

Forrest Horn, Chairman
Crow Tribal Council
Crow Agency Montana
April 10, 1978

"The board believes the system, as they now understand and envision it, will be beneficial to the future operation of the Tribal government."

Thomas C. Whitford, Director
Montana Inter-Tribal Policy Board
May 18, 1978

"The Zuni Tribal Council is in full support of the endeavor as it will enhance and strengthen our tribal government. The Zuni Pueblo is one of the largest pueblos and is isolated from all major towns and this type of communications would greatly benefit the tribe in a lot of ways."

Edison Laselute, Governor
Pueblo of Zuni
June 9, 1978

"...It would be to our advantage as Indian peoples to master and utilize this advanced form of communication. The result would be invaluable."

Elaine Clayborn
Native American Studies Program
University of Montana
May 12, 1978

"...Sinte Gleska College is very interested in exploring the possibilities of developing a viable telecommunications delivery system....please keep us informed of any developments in this area and consider us in any future plans."

Stanley Red Bird, Chairman
Board of Directors
Sinte Gleska College Center
Rosebud, South Dakota
May 2, 1978

"...The potential of the (satellite) would help improve communications on the reservation...."

Bill Richmond, Media Technician
The Shoshone - Bannock Tribes
Fort Hall Indian Reservation
March 20, 1978

"...it looks like the potential for a larger viewing audience was certainly there...."

Jeanne M. Yellowtail, Director
Native American Graduate Fellowship
Montana State University
April 17, 1978

"That demonstration was a milestone in Indian education, I feel: and I want to share the exhilaration of that experience with all our readers....including the decision-makers in Congress associated with Indian education...."

Editor, "Indian Education Record of Oklahoma"
Juanita West
Tulsa Indian Youth Council
July 5, 1978

"...it was a sign of the times...."

United Indian Planners Association
UIPA Newsletter
June, 1978

"The program you set up, most successfully demonstrated the communication technology available to link rural areas with experts and politicians in Washington, D.C. The ability to probe issues of concern to local leaders without having to travel great distances was graphically demonstrated.... and I hope this project will be the beginnings of some successful communication advances for the Crows, other Indians and the State of Montana."

Robert M. Hendrickson, Assistant Professor
Higher Education
Montana State University
April 25, 1978

"...the accomplishments of the broadcast were many, including the reality of the broadcast itself. The potential use of this satellite communication in terms of educational delivery mechanisms on reservations and in the remote, rural areas are limitless."

Robert M. Peregoy, Director
Center for Native American Studies
Montana State University
April 25, 1978

"The future and survival of Indian people may one day be dependent on how fast, efficient, and effective we are able to communicate.

It may take time before new ideas become acceptable, but in the meantime, we must be determined to remain positive and actively pursue beneficial change rather than settle for defeatism."

Anonymous Observer
April 10, 1978

4th Grade
Crow Agency, Mt.
59022

Dear N.A.S.A. people,

Thank you for coming to Crow Agency. I enjoyed it when I went on the T.V. screen. When I went in the van with my mom and dad I saw a lot of wires and some colors I didn't know.

A visitor,
Kenny Shane

Abbreviations and Acronyms

AIPC	All-Indian Pueblo Council
BIA	Bureau of Indian Affairs
CTS	Communications Technology Satellite
DOI	Department of Interior
ft	feet
HEW	Department of Health, Education, and Welfare
hr	hour
IHS	Indian Health Service
JSC	Lyndon B. Johnson Space Center
LeRC	Lewis Research Center (NASA)
NASA	National Aeronautics and Space Administration
OIE	Office of Indian Education
PET	Portable Earth Terminal
RMT	Rocky Mountain Time
TET	Transportable Earth Terminal
NM	New Mexico
MT	Montana

Introduction

Close to the heart of the American Indian way of life is the process of communication. Aside from the passing of the heritage of oral tradition, many Indians have made much use of public address.

Today, with the reality and seriousness of the energy situation, increased costs of travel, and critical issues that face all tribes, the job of the tribal officials and government leaders continues to be more demanding. Tribal needs for direct participation in the legislative process gets stronger, along with improvement of other social needs - health, education, vocational training, protection of cultural heritage, and dissemination of information.

As the problems tribes and the government must deal with get more and more complex, it has been shown that satellite communications can be made accessible to just about anyone anywhere, especially citizens from smaller communities and rural areas.

Background

A number of tribal chairmen and national Indian organizations have expressed their interest in utilizing some of the appropriate technology that has been made available to the public through recent advances in research and development of space applications.

The interest shown by Indian leadership to utilize NASA's capability to transfer appropriate technology to tribes for use in achieving some of their reservation concerns, resulted in this American Indian Satellite Demonstration Project which was duly approved by the CTS Project Office.

The basic objective of the project was to demonstrate, on a small scale, the capability of utilizing a communications satellite interactive television system to more effectively convey policy, program and technical information as well as other types of communications objectives between (1) Indian tribes and the Federal Government, (2) individual and groups of tribes and (3) tribes and educational institutions. (See **Purpose**.)

To show this capability, the Crow Tribe and the All Indian Pueblo Council, Inc., consented to act as hosts to various tribes and others participating in the activities.

The satellite was used to bring together participants from different geographical regions for informal discussions on important topics and issues. These activities were representative of several possible satellite communications techniques which could be utilized by native peoples during the daily conduct of their affairs.

PURPOSE

The purpose of this demonstration was to show the concepts of using satellite telecommunications in delivery of services beneficial to American Indian communities.

More specifically, this included the following basic objectives:

Tribe-to-Tribe

- Demonstrate capability of inter or intra-tribal communications

Tribe-to-Federal Agency

- Demonstrate two-way voice and television communication between tribes and federal agencies and the congress.

Tribe-to-Educational Institutions

- Demonstrate two-way communications between tribes and community colleges, formal state university programs, and other educational institutions

Each of these three objectives was demonstrated through planned activities and representative participants from tribes, federal agencies, congress, and educational institutions. At the conclusion of each day's activities, the tribes verified and evaluated the capabilities and utilization of satellite techniques. The value of the actual program content and activities demonstrated, was chosen by the tribes to be representative of potential applications. It was more important to the observers and participants to evaluate and assess the merits of the techniques and capabilities employed. The actual subject matter or topics chosen for discussion in the program content were selected for their interest and general appeal and were not judged in evaluating the usefulness of communicating by satellite.

The following is a partial list of the benefits realized:

Reach more people more effectively. Participants experienced the opportunity of meeting with people who would not otherwise have been able to fit into their busy appointment schedules. The demonstration showed that, in most cases, communication between people by satellite may be demonstrated just as effectively as meeting in person.

Increase participation and feedback. The demonstration encouraged meaningful dialogue between tribes themselves, as well as with government officials. The two-way interactive nature of the method of communicating by satellite facilitated an open exchange of views and a honest, forthright approach to questions and answers.

Also, this technique has been envisioned to be a critical tool to open up the legislative processes and government services to people who cannot afford the time or money to travel to Washington, D.C. (See "Words From The Congress.")

Save time and energy. The demonstration provided evidence that satellite communications can save the time of the participants both through the reduction or elimination of travel and by the reduction of meeting time due to more focused and better prepared preparation.

The demonstration also showed how people can conserve their personal energy (eliminate fatigue) of participants and the physical energy that would have been expended on travel.

Increase tribal unity with interest and understanding. The demonstration encouraged and stimulated a meaningful dialogue in all areas of Indian concerns and issues. The tribal participants experienced an eagerness to express their views.

Person-to-person contact. This demonstration was more than sophisticated, complex electronic equipment. Like the telephone, one did not have to be knowledgeable on *how* it worked to utilize its benefits.

The demonstration had a humanized touch. Two-way, live, interactive discussion by satellite proved to be no different than what happens when people meet in person.

As soon as the participants adjusted to the newness of the equipment, it was shown that they felt almost as if they were in the same room with each other.

Site Descriptions

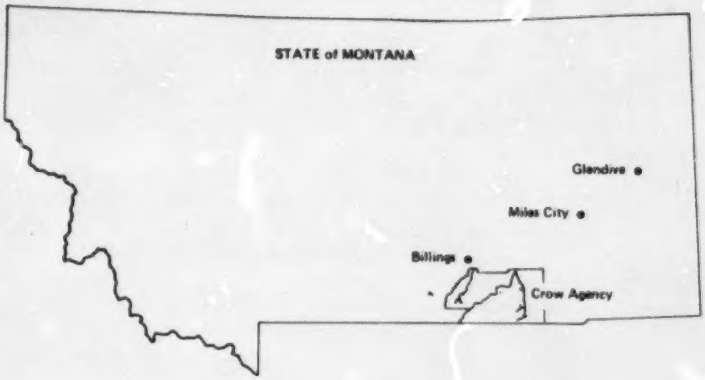
There were four different geographical location sites for the demonstration. These were distributed in the north, south, east, and west regions of the country and were specifically located in the following areas:

Crow Agency, Montana

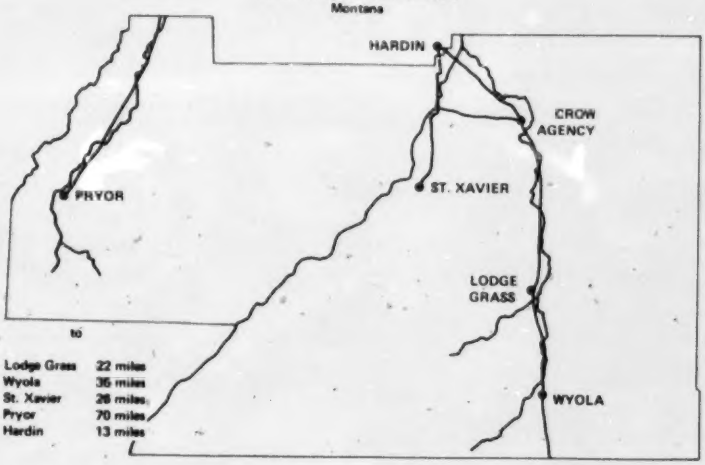
- Demonstration hosted by the Crow tribe and the Crow Central Education Committee, held on the reservation at the St. Dennis Community Center.

Albuquerque, New Mexico

- Demonstration hosted by the All-Indian Pueblo Council, Inc., held at the Cultural Center building, Albuquerque, New Mexico.



Map of
CROW INDIAN RESERVATION
Montana



to	
Lodge Grass	22 miles
Wyola	35 miles
St. Xavier	28 miles
Pryor	70 miles
Hardin	13 miles

Washington, D.C.

- Participants utilized existing CTS facilities at room 227-F, 600 Independence Avenue, S.W., NASA Headquarters, Washington, D.C.

Moffett Field, California

- Participants utilized existing CTS facilities at NASA Ames Research Center, held at room 9, building N-200, Moffett Field, California.

Most all of the broadcasting was conducted from each site location throughout the 3-day demonstration period. (See Detailed Activities for exact time and place of scheduling.)

NASA Goddard Space Flight Center had a passive role in controlling the technical operations in the Washington, D.C. area and was not active in organizing any taped or live broadcasts.

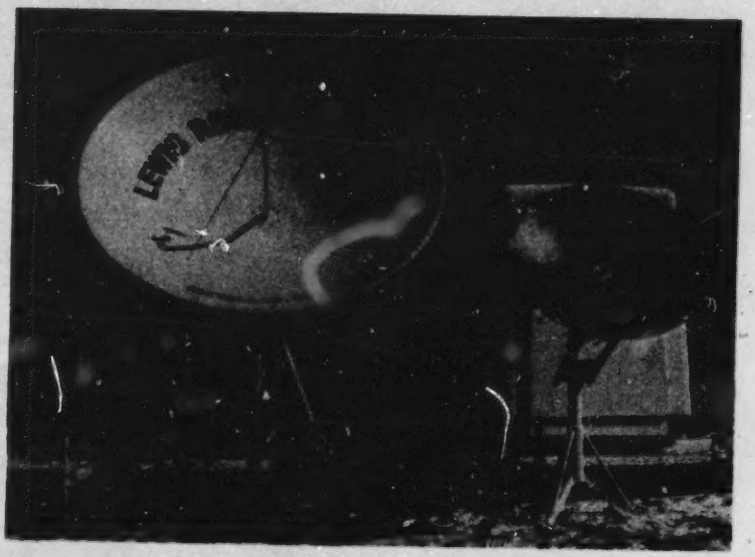
A site survey was conducted at each location several days prior to the start of the demonstration. The site was examined for access to the satellite spacecraft, electrical power availability, security of equipment, logistics of the equipment, and all video/security interface requirements.

An on-site assessment of seating arrangements, camera locations, lighting, back-drops, props, etc. was performed at the terminal location by the Tribal Site Coordinator with support and assistance from the NASA lead engineer and/or NASA Site Coordinator. All initial planning was done by the Tribal Site Coordinator.

Equipment Locations

Portable Earth Terminal (PET) for two-way TV	Crow Agency, Montana Site no. 1
Transportable Earth Terminal (TET) for receiving TV, transmitting audio only	Albuquerque, New Mexico Site no. 2
NASA-Ames ground station for two-way TV	Moffett Field, California Site no. 3
NASA-Goddard ground station for two-way TV, NASA headquarters utilized Bell Telephone connection to Goddard.	NASA Headquarters, Washington D.C., Site 4A and 4B.

Portable Earth Terminal (PET) is a van-like vehicle whose equipment will broadcast and receive television and voice signals via the CTS Satellite. PET was stationed at Crow Agency, Montana.



Transportable Earth Terminal (TET) has capability for receiving television and sending and receiving audio signals and was located at Albuquerque, New Mexico

Coordination Loops

There were two main internal coordinating communication loops in service during the 3-day demonstration used for general coordination of program and technical activities.

Program Loops - Telephone lines were installed at each location site with hook-ups to Washington, D.C. This loop was used by the Tribal/NASA Site Coordinators for conferences with the Project Liaison.

The function of this telephone communications link was to serve as a means of scheduling changes to the program activities that arose during the conduct of the daily demonstrations.

Technical Loops - A separate telephone line was installed at each broadcasting terminal which was hooked up to NASA Goddard Space Flight Center, Greenbelt, Maryland. The Washington, D.C., location was not included.

This loop was used by the lead engineers at each location site (excluding NASA Headquarters) for the purpose of technical monitoring and coordination including quality of receive and transmit signals, and any troubleshooting of anomalies. Basically, it functioned as a technical problem solving line for use among the lead engineers and technical crew only. Matters pertaining to program content used the program content line.

Demonstration Ground Rules

The 3-day demonstration results and evaluations are by no means conclusive, but rather should be viewed as a "first cut" at defining a program capability for using satellite communications.

The NASA provided technical consultative services and satellite communication facilities, spacecraft time, and two portable ground terminals. Technical and operational control for CTS facilities resided at LeRC under direction of P. L. Donoughe, Manager, CTS Operations and Experimentation. (216) 433-4000 X6769.

A dedicated or independent communications system solely for education was not proposed. Rather, educational programming designed for the Indian community assumed to be part of a larger communications which would be one of many services of services for tribes.

Roles and Responsibilities

NASA/Tribal Relationships

The demonstration was wholly planned and conducted by the tribes. The NASA made the necessary arrangements to implement the broadcast of the program at the request of the tribes. Such arrangements included the provision for ground terminals, analysis of the operational configuration, and the request for satellite time.

The tribes provided and made arrangements for the program content (including activities and participants), and the scheduling.

NASA/BIA Relationship

The NASA worked with the BIA staff to coordinate the project and offered technical consultation to the tribes upon request.

Position Descriptions

Tribal Site Coordinator(s)

- Served as principal interface between the hosting tribal organization and NASA, Bureau of Indian Affairs, local observers, and participants.
- Scheduled all participants in the daily execution of demonstration activities.
- Ensured all activities were properly coordinated in accordance with each day's schedule activities.
- Acted as official greeter and principal point of contact for all arriving guests and observers.
- Conducted an on-site briefing to all guests, observers, and participants prior each day's demonstration (briefing included announcement of the daily activities, description of purpose and objectives of the demonstration, system description of the technical hardware and configuration, questions and answers).
- Coordinated the program content during the demonstration with the local NASA Site Coordinator and the Project Liaison.

NASA Site Coordinator(s)

- Assisted the Tribal Site Coordinator upon request.
- Participated in pre-demonstration on-site briefings of each day's activities and supported the Tribal Site Coordinator in the description of the system technical operation prior to the daily demonstration.
- Supported the Tribal Site Coordinator in matters pertaining to official protocol.

Technical Crew

- Responsible for set-up, check-out, and system operation including video, audio connections, and lighting.

Project Liaison

- Washington, D.C., based to coordinate the project development and implementation of daily activities with tribal and NASA Site Coordinators at all locations.
- Ensured continuity and timeline scheduling of Washington, D.C., participants.
- Served as moderator or announcer as deemed necessary.
- Worked with NASA and BIA Officials as an interface and point of contact.
- Maintained official liaison with protocol activities.

Other Interfaces

Other participants from various organizations were contacted and extended an invitation to participate or observe at the request and approval of the tribes.

Invitations to individuals and other Indian tribes and organizations were also extended directly from the tribes.

Program and Technical Site Staff

In order to coordinate the details of the project and to ensure successful accomplishment of the objectives, the following positions and personnel were identified:

Crow Agency, Montana

1 Tribal Site Coordinator and Staff	Sam Windy Boy
1 NASA Site Coordinator	Dave Wright
1 NASA Technical Lead Engineer	Joe Fiala
3 Bendix Contractor Technical Crew	Ken Asbury
	Clarence Neuman
	Lou Baselice

All Indian Pueblo Council, Inc.
Albuquerque, New Mexico

1	Tribal Site Coordinator and Staff	Dr. Willie Alire
1	NASA Site Coordinator	John Kaskaske
1	NASA Technical Lead Engineer	Marty Conroy
2	NASA Technical Crew	Ed Smith
		John Ropchock

NASA Headquarters
Washington, D.C.

1	Project Liaison	Jerry Elliott
	NASA Headquarters Contact	Wasyl Lew

NASA Ames Research Center
Moffett Field, California

NASA Ames Contact	Brad Gibbs

Detailed Activities

The goal of the demonstration was to implement as many as possible the tribal-recommended activities and topics for discussion within the realities of limited staff time, budget, and the technical scope of the project.

Every effort was made to strive for "bite size" realistic activities and accomplishments rather than "pie-in-the-sky". Priorities were established accordingly.

Prior to the demonstration, some of the recommended activities became obsolete or inappropriate. Some were duplicated or overlapping, therefore, this demonstration grouped all of the basic tribal concerns under major topic headings to be correlated with satisfying the basic project objectives.

In several instances, the demonstration went beyond the original recommendations when new and timely priorities developed.

The detailed activities and programming occurred on three days according to the following schedule:

Day 1 Monday, April 10: 2:15-5:15 p.m. Mountain Time
Day 2 Wednesday, April 12: 2:15-6:15 p.m. Mountain Time
Day 3 Friday, April 14: 11:15 a.m.-1:15 p.m. Mountain Time

All activities are given in Tables 1, 2, and 3.

Table 1. Satellite Demonstration Program Activities

Date: April 10, 1978, Day 1

*Time: 2:15 - 5:15 p.m.
Rocky Mountain Standard Time

Objectives	*Participating agencies*	*Timeline**	*Program activities*
1. To Demonstrate Tribal to Federal Government Communications	Dept. of Interior	2:15 - 2:17	Gordon Law - Kick off satellite demonstration
	Tribal officials	2:17 - 2:35	Greetings and welcome from Crow Agency and the Northwest Tribes
			Greetings and welcome from All Indian Pueblo Council and the Southwest Tribes
	Congress - Capitol Hill	2:25 - 3:05	Alan Parker, Staff Member, Senate Select Committee on Indian Affairs
		3:05 - 3:35	Congressman Mike Blouin, House Committee on Education and Labor - Indian education legislative concerns
	Dept. of Agriculture	3:35 - 3:55	Assistant Secretary Alex Mercure - Role and purpose of Rural Development Services
	Indian Health Service and Community Health Service	3:55 - 4:15	Dr. Emery Johnson and Dr. Lionel de Montigny - Priority in Indian health Dr. Michael Samuel - Role and purpose of Community Health Service
2. Tribe to Tribe Communications	All Indian Pueblo Council, Inc. and various tribes Southwest Region Crow Tribe and various tribes in Northwest Region	4:15 - 5:05	Interactive conference on water rights (with David Harrison, BIA, Washington, D.C. as resource person)
Conclusion of Day 1	Department of Interior	5:05 - 5:15	Recap of day's activities by Dr. Gordon Law, Assistant and Science Advisor to the Secretary

*All times given in Rocky Mountain Standard Time

Table 2. Satellite Demonstration Program Activities

Date: April 12, 1978, Day 2

*Time: 2:15 - 6:15 p.m.
Rocky Mountain Standard Time

Objectives	*Participating agencies*	*Timeline**	*Program activities*
1. Higher Education Institution to Tribes Communications/ Educational Delivery via Satellite	Humboldt State College Natural Resource Dept. and Teacher Training Program	2:15 - 3:10	Video on Natural resource or teacher training
	California State Univ., Long Beach, California		**Video-instruction, assimilation, Questions and answers** **Broadcast from Moffett Field, California**
		3:10 - 3:20	Planned technical reconfiguration satellite antenna switch to Wash., D.C.
2. To Demonstrate Federal Government Agencies-Tribal Communications via NASA Satellite	Department of Interior	3:20 - 3:23	Dr. Gordon Law - opening remarks
	Department of Agriculture	3:23 - 3:45	Assistant Secretary Alex Mercure and Carl Larson - Rural Development Services
	Indian Health Service, HEW, Washington, D.C.	3:45 - 4:05	Dr. Lionel de Montigny and Chuck Brady - Indian Health Service
	Bureau of Indian Affairs	4:05 - 4:25	Patrick Hayes - judicial services and the Oliphant court case discussion
3. To Demonstrate Tribe to Tribe Communications Via NASA Satellite	All Indian Pueblo Council, Inc. and Crow Tribe/Crow Central Education Commission	4:25 - 4:50	Topic for discussion: natural resources (with Dick Wilson, BIA, Washington, D.C., as resource person)
To Demonstrate Federal Government Agencies-Tribal Communications via NASA Satellite	U.S. Senators from State of New Mexico and U.S. Senator and House Representative from State of Montana	4:50 - 5:55	Senator Jack Schmitt, Senator Pete Domenici, Senator Paul Hatfield, and Congressman Ron Marlenee - Panel discussion with tribes on Indian legislative concerns
	Department of Interior	5:55 - 6:05	James A. Joseph, Under Secretary - personal message
	Congress	6:05 - 6:13	Senator Paul Hatfield and Congressman Ron Marlenee - legislative concerns
Conclusion of day 2	Department of Interior	6:13 - 6:15	Dr. Gordon Law - summary of day 2 and preview of day 3

*All times given in Rocky Mountain Standard Time

Table 3. Satellite Demonstration Program Activities

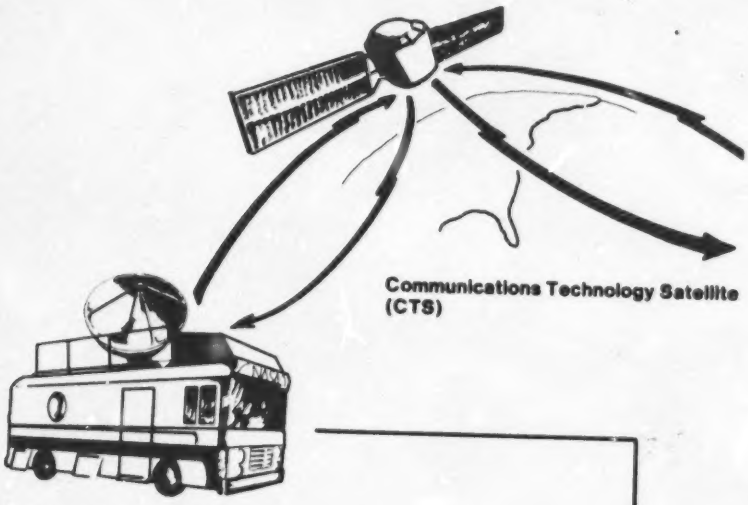
Date: April 14, 1978, Day 3

*Time: 11:15 - 1:15 p.m. Rocky Mountain Standard Time

Objectives	*Participating agencies*	*Time Line**	*Program activities*
1. To Demonstrate Federal Governmental Agencies Tribal Communications via Satellite	Department of Interior	11:15 - 11:20	Dr. Gordon Law - opening remarks for day 3
	The White House	11:20 - 11:25	Nelson Diaz, Vice President's Office - personal address from Vice President
	Bureau of Indian Affairs and Office of Indian Education, HEW	11:25 - 12:00	Dr. William Demmert, BIA, and Dr. Gerald Gipp, OIE - status of Indian education
	Bureau of Indian Affairs Department of Interior	12:00 - 12:10	Martin Seneca, BIA, and Tom Fredericks, DOI/SOL - BIA trust responsibility
		12:10 - 12:45	(Goddard SFC transmitter being repaired)
	Bureau of Indian Affairs	12:45 - 1:10	Forrest Gerard, Assistant Secretary - Indian Affairs, Martin Seneca, BIA, Tom Fredericks, SOL - discussion of BIA with question-and-answer period
Conclusion of demonstration	Department of Interior	1:10 - 1:15	Dr. Gordon Law - summation of demonstration and discussion of future

*All times given in Rocky Mountain Standard Time

Day 1, April 10, 1978
Demonstration of Federal Government/
Tribal Communications

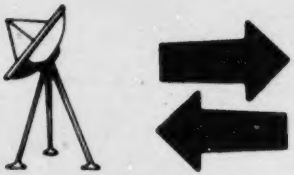


Communications Technology Satellite (CTS)

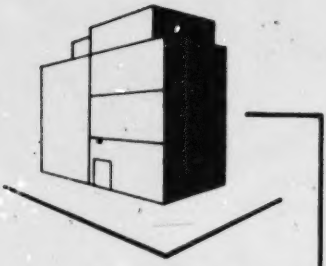
Portable Earth Terminal (PET)

(L to R) Lloyd Pickett, Nelvette Simion, Dave Stewart, and Janine Windy Boy

Crow Reservation

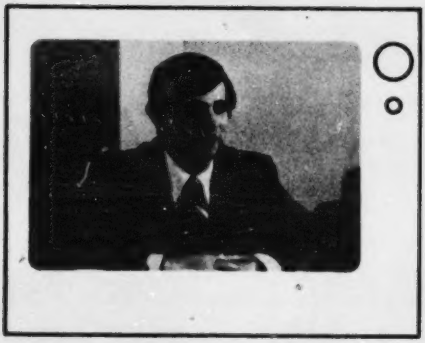


NASA-Goddard Earth Terminal
Greenbelt, MD



NASA-Hq. Studio
Washington, D.C.

U.S. Congress in
Washington, D.C.



Hon. Mike Blouin (Iowa), House
Committee on Labor and Education

Wash., D.C.

Hon. Mike Blouin, Congressman from Iowa, (center), Alan Lovesee (left), and staff member (right) reporting on Indian Education Legislative issues.

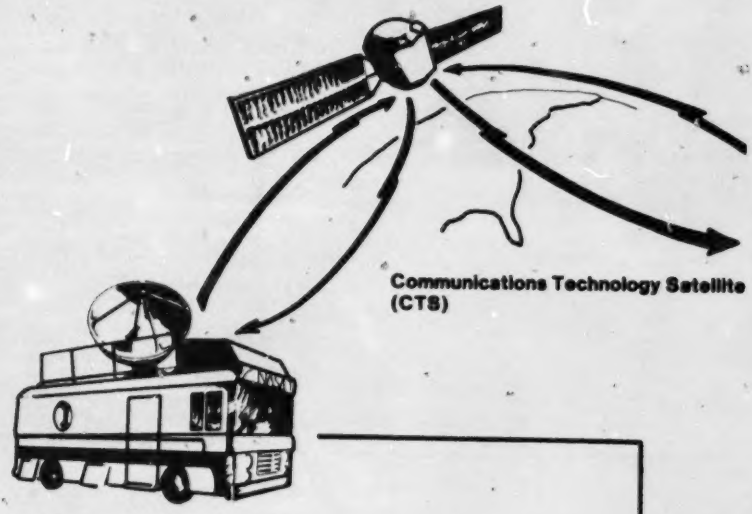
Department of Agriculture Officials (L to R) Alex Mercure, Assistant Secretary, and Carl Larson, Deputy Administrator, Rural Development Service, on broadcast from Washington, D.C., NASA Headquarters.

(L to R) Lloyd Pickett, Helvetta Simion, Dave Stewart, and Janine Windy Boy (Crow panel moderator).

Dr. Gordon Law
Assistant and Science Advisor
U.S. Dept. of Interior
Serving as panel moderator
in Washington, D.C.

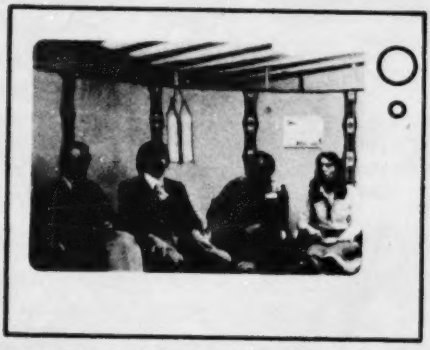
Television Monitors
Participants separated by long distances.

Day 2, April 12, 1978
Demonstration of State, Local, and Federal Participants



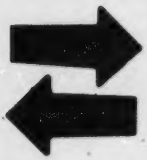
Communications Technology Satellite (CTS)

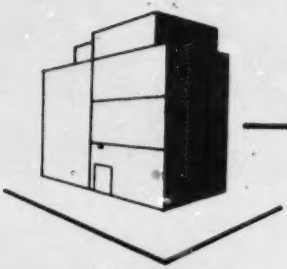
Portable Earth Terminal (PET)



(L to R) Hon. Thomas Judge, Governor of Montana, Sam Windy Boy, Joe Medicine Crow, and Carline Old Elk

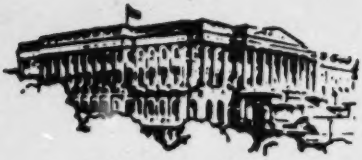
Crow Reservation





NASA-Goddard Earth Terminal
Greenbelt, MD

NASA-Hq. Studio
Washington, D.C.



Dirksen Senate Office Building
Washington, D.C.

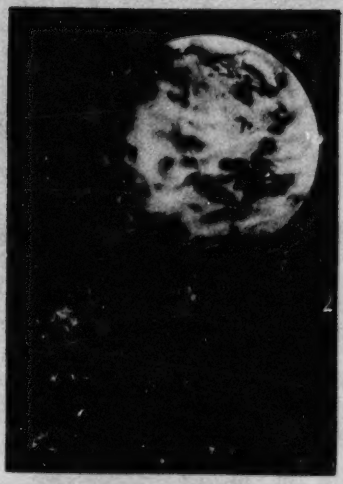
Alan Parker, Senate Select Committee on
Indian Affairs

Wash., D.C.

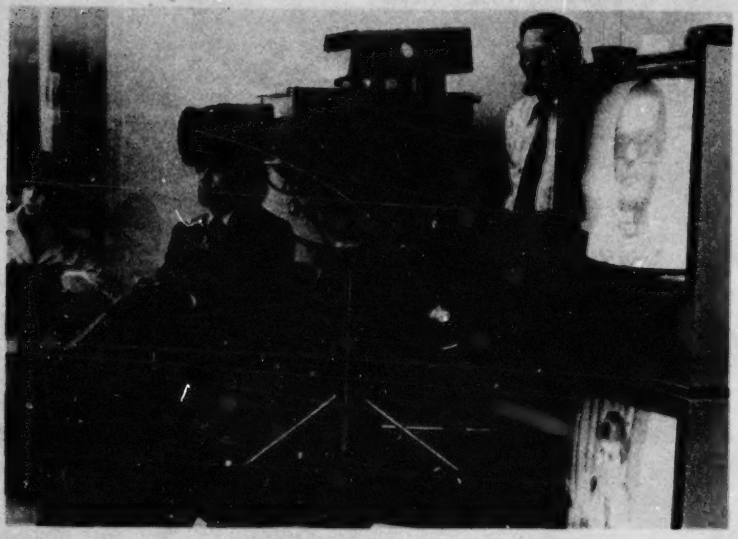
Satellite's most dramatic moment came when Dr. Gipp (HEW) and BIA's Dr. Bill Demmert explained the Administration's decision to move schools out of BIA.

Gov. Judge and Sam Windy Boy listen in silence as educational shift is announced.

Participating in a broadcast are (left) Dr. Lionel deMontigny, Director, Division of Indian Community Development, IHS, and Charles Brady, Director, Office of Systems Development and Analysis, IHS.



The NASA CTS Satellite is in stationary orbit 22,300 miles above the Earth off the west coast of South America.



The Telecommunications Conference in Process. (L to R) Nancy Boone, U.S. Dept. of Interior and Jerry Elliott, NASA Project Liaison.

Supplementary Activities

Some individuals expressed a willingness to donate their equipment and services to the tribes in support of the 3-day activities.

Montana Media, of Missoula, Montana opted to use their own video equipment; recording equipment, and personnel during the project. They committed to taping the event for a journalistic piece for post-demonstration needs.

The Montana Media personnel included: Elliot Porter, Cinematographer; Lex Hames, On-Camera Interviewer, plus 3 Production Assistants.

The All-Indian Pueblo Council, Inc., made similar video-taping arrangements of their own activities and support from a local television station in Albuquerque, N.M.

Evaluation Plan

The effectiveness of the satellite communications demonstration was evaluated by the participants by means of a brief questionnaire and opinion poll.

All responses were anonymous. No personal information was desired. This evaluation instrument assisted in assessing the merits and future utilization of satellite telecommunication services.

The questionnaire was distributed to each observer and participant prior to the start of each day's activities. They were instructed to respond to each question as best as they could.

The Tribal or NASA Site Coordinator at each location site was responsible for distributing and collecting the responses.

Upon completion of the demonstration, a short report was prepared by the Albuquerque Site Coordinator commenting on the demonstration evaluating the effectiveness of utilizing satellite communications at the New Mexico site. No report was available from the Montana Site Coordinator; however, the questionnaires received speak for themselves.

Crow Agency, Montana
Questionnaire Results
Monday, April 10, 1978

Question	*Response*		
	Very much	*Some-what*	*Very little*
The purpose of this satellite demonstration is to show that, through space technology, tribes can communicate with other reservations, federal agencies and Congress. Did today's session show you the capabilities of a satellite system?	87%	13%	0
Do you think the tribe and the federal government will benefit from the use of this satellite?	93%	7%	0
Was the presentation by the Senate Select Committee on Indian Affairs of interest to you?	49%	31%	11%
	Unanswered - 4		
Do you think the presentation by the Department of Agriculture, Wash., D.C., was of significant value?	30%	53%	5%
	Unanswered - 5		
Do you feel the Interactive Conference on Water Rights by the tribes was informative?	44%	44%	7%
	Unanswered - 2		
Did you see the benefits of this kind of communication system for Indian tribes?	82%	16%	2%

Did you see the benefits of this kind of communications system for yourself as an individual? 58% 33% 9%*

*Also interpreted as "I don't know"

Are you in favor of the Indian tribes participating in a telecommunication satellite system like this?

Yes - 96% No - 0 Unanswered - 1

Identification: What was your roll in the demonstration program?
Participant - 33% General Audience - 57%
Speaker - 9% Unanswered - 1

Crow Agency, Montana
Questionnaire Results
Wednesday, April 12, 1978

Question	*Response*		
	Very much	*Somewhat*	*Very little*
The purpose of this satellite demonstration is to show that through space technology, tribes can communicate with other reservations, federal agencies and congress. Did today's session show you the capabilities of a satellite system?	90%	10%	
Do you think the discussion between the tribes and the Department of Agriculture was of significant value?	62%	38%	
Was the interactive discussion with the Indian Health Service and tribes productive?	20%	80%	
		Unanswered - 1	
Would you like to see further communication/dialog with judicial services on future sovereignty issues?	90%	5%	5%

As an individual what would your primary usage be:

Adult Education	- 52%	Energy/Natural Resources	- 48%
Primary Education	- 33%	Agriculture	- 24%
Secondary Education	- 10%	Other	- 33%
Vocational Training	- 24%		
Health	- 29%	(Community college, early childhood	
Business Conference	- 19%	education, teacher training, parent	
Cultural Program	- 43%	training)	

Identification: What was your role in the demonstration program?

Participant - 38%
General Audience - 43%
Speaker - 5%
Staff - 24%
Technical Crew - 0%

Crow Agency, Montana
Questionnaire Results
Friday, April 14, 1978

Question	*Response*		
	Very much	*Some-what*	*Very little*
Did today's sessions demonstrate to you the feasibility of a satellite communications system?	87%	13%	0
Do you believe that members of the congress or agency offices would be easier to reach by using a satellite communications system?	74%	26%	
Do you believe that tribes or individuals can get better results by using a system of this kind?	65%	35%	

Would you support this kind of a communications system for your reservation by

A. Writing letters to your congressional delegates?
YES 97% NO 0
(Note: 4 unanswered)

B. Telling your friends, relatives and your council members about the different possibilities of this kind of system?
YES 97% NO 3%
(Note: 2 unanswered)

C. Drafting Tribal resolutions of support?
YES 96% NO 4%
(Note: 5 unanswered)

Would you like to be kept up to date on t[illegible]ss of establishing systems like this on reservations?
YES 100% NO 0
(Note: 1 unanswered)

Participant 32% General Audience 61% Speaker 7%

Comments (written unsolicited)

1. Has good potential for educational TV on a reservation. Also tribes can link up with each other in educational cultural, political and other projects

2. I can see the potential in all these areas for the community as a whole (based on question 5.)

3. Very good; we need this type (of) communication.

4. Excellent presentation

5. Impressed

6. I feel it is necessary for better communication and more information review.

All Indian Pueblo Council, Inc.
Albuquerque, New Mexico

Comments

This is my summary of the Satellite Telecommunication Demonstration held in All Indian Pueblo Culture Center, Albuquerque, New Mexico, on April 10, 12, 14, 1978. On each day of the telecommunication demonstration, a number of evaluation sheets were handed out to each participant as they came to witness the event. They were asked to make comments on the evaluation sheet. A very limited number of them did respond. As the result of this, I have a very small representation of opinions to work with. There could be several factors causing this lack of action on the seemly indifference on the questionnaires. Some of the possibilities are; mistrust, unfamiliarity or simply lack of information on the purpose of the telecommunication demonstration. I made the following observation on the returned evaluation sheets and in conjunction with my personal observation of the demonstration. The comments on understanding of the objectives of the telecommunication demonstration were noticeable enough to suspect a possible existence of communication gap between site coordinators. However, the main objective here is to let the Indian people and their elected tribal leaders control and set the pace, direction, and strength of each dialogue. The site coordinators must maintain a low profile. They must rely on patience, perception and perseverance. They must have knowledge of traditional and contemporary ways of self-expression of the American Indian. The Pueblos were both traditional and articulate in the use of the English language. The Pueblos through their governors were very pleased to have served as host for the Satellite Telecommunication Demonstration. they see the need of telecommunication system within the 19 Pueblos. Not only would the Pueblos benefit from the Satellite Telecommunication System, but other tribes as well. The Pueblos would welcome and support a pilot program. They would like the total audio-video system implemented within the Pueblos and other tribal locations. The All Indian Pueblo Culture Center is more than suitable for future audio-video demonstration or a site for pilot program.

In conclusion, the Satellite Telecommunication Demonstration was a highly successful endeavor. It brought an atmosphere of cooporation between tribal groups and various governmental agencies. The California schools presented one of the many possible usage of the Satellite Telecommunication system. It was one of the more memorable events to have witnessed.

John Kaskaske (Kickapoo)
NASA SITE COORDINATOR
ALBUQUERQUE, NEW MEXICO

Conclusions

The demonstration proved to be evidence of tribes and individuals working together to realize and achieve a common goal. Certainly, an atmosphere of unity and cooperation prevailed.

Any new methods of communication must be viewed in terms of its usage, cost effectiveness, and benefits to be derived. Hence, tribal and urban Indian communities, single agency or a consortium of federal agencies must give further study to the trade-offs that need to be made in the utilization of satellite technology.

The fact that the communication process occurred and was interactive on behalf of all the participants served to illustrate the benefits of the system and successful accomplishment of the demonstration objectives.

In particular, the following specific conclusions were realized:

- A communications satellite interactive system can deliver multiservices and programming beneficial to urban and rural American Indian communities.

- Constructive dialogue and programs concerning economical, social, and legislative issues were successfully conducted via satellite technology between people differing in language, geographical locations, education, and cultural backgrounds.

- Satellite telecommunications can provide a new mechanism for informed dialogue between American Indian communities and various representatives of the federal government.

- Interactive, informal discussions that occurred during the demonstration did serve to strengthen the tribal, federal, and congressional processes by making the communications more immediate and accessible.

- Satellite communications opened up the legislative process by creating an atmosphere of better informed dialogue and transfer of information between congressmen and their constituents.

- The utilization of satellite communication techniques could actually lower current operating costs and expenditures and assist in streamlining the efficiency of tribal/federal government operations and services.

- The actual costs of implementing a satellite communications capability will depend largely upon an improved understanding and definition of the priorities and needs of the users.

What did satellite telecommunications demonstrate?

Two-way interactive television with the TV signals transmitted by satellite. Using satellite techniques, one or more people at one reservation or location heard and talked with groups of people at distant locations around the country. Simultaneously, tribes and/or government officials saw, heard and talked with others around the country.

Did the satellite telecommunications work?

Yes. This demonstration showed that this method of communications is technically feasible.

Were the conferences or educational broadcasts useful?

Yes. Participants found that communicating by satellite helps people reach others more effectively, increases individual and group participation and feedback, saves time and energy of tribal officials, educators, and government officials, and improved understanding of current issues and stimulates interest and an improved understanding of the current issues and concerns facing tribes.

When will satellite communications be widely available?

Small low-cost earth terminals that can be located in small communities and rural areas are available now and do not necessarily require permanent facilities. Tribal and Federal Government support is needed first before a longer term program for using a satellite on a regular basis can be implemented.

Recommendations

It is recommended that those tribal and urban Indian populations interested in exploring the merits of satellite telecommunications perform a "needs analysis" outlining the various uses they would have for satellite services.

This assessment along with the valuable experience gained during the demonstration could lay ground work for future developments that could lead to longer range telecommunication services to native American Indian communities.

Acknowledgements

The project team wishes to recognize the contributions of some very special individuals who have worked so hard to make this demon-

stration of the Communications Technology Satellite a meaningful experience to the participating tribes, agencies and persons.

SAM WINDY BOY, Jr., CTS Demonstration Site Coordinator, Crow Agency Site; DR. WILLIE ALIRE, CTS Demonstration Site Coordinator, Albuquerque, N. M., for their tireless coordination and direction of the demonstration planning, development, implementation and programming, and for his willingness to work on a volunteer basis.

PILA LARNELLE, CTS Demonstration Site Productions Director, Crow Agency site; of the Indians in Communications Center in Tacoma, Washington and of Evergreen State College, Olympia, Washington; for his knowledgeability in television and communications production, and his willingness to share this knowledge with the staff of the Crow Central Education Commission, and for his willingness to work on a volunteer basis.

The project team wishes to also acknowledge the following organizations and persons who have helped make the demonstration possible:

All Indian Pueblo Council, Inc., Chairman, Delfin Lovato, and staff

Crow Tribal Council, Chairman, Forrest Horn

Crow Central Education Committee, Executive Director, Joe Medicine Crow, and staff

Bureau of Indian Affairs, Assistant Secretary for Indian Affairs, Forest Gerrard, and staff

Department of Interior, Assistant and Science Advisor, Dr. Gordon Law

NASA Lewis Research Center, Deputy Director, Dr. Bernard Lubarsky, and staff. In particular Mr. P. L. Donoughe, Manager, CTS Operations and Experimentation.

NASA Goddard Space Flight Center, Mr. Al A. Whalen and staff

NASA Johnson Space Center, Director, Dr. Christopher C. Kraft

NASA Headquarters, ATS/CTS Program Manager, Mr. Wasyl Lew

And to all the participants, observers, and dedicated men and women who gave their assistance and untiring efforts to help make the project a meaningful reality.

Appendix A - Project Team

Appreciation is expressed to the project team comprised of individuals who not only expressed interest in the project, but who were instrumental in the planning and conduct of the demonstration.

Windy Boy (Sam and Janine)
Crow Central Education Committee
Box 370
Crow Agency, Montana 59022
(406) 638-2228 or 395-4478

Principal Contact for
Crow and Northwest tribes

Dr. Willie Alire
C/O Research & Cultural Studies
Development
Institute of American Indian Arts
Cerrillos Road
Santa Fe, N. M. 87501
(505) 476-1486

Principal Contact for
All-Indian Pueblo Council,
Inc. and Southwest tribes

Delfin J. Lovato
Chairman
All Indian Pueblo Council, Inc.
1015 Indian School Road, N. M.
P. O. Box 6507
Albuquerque, N. M. 87107
(505) 247-0486

Dr. Gordon Law
Assistant and Science Advisor
18th and "C" Street
RM. 7355-59
Dept. of Interior
Washington, D.C. 20245
(202) 343-6167

Principal Contact for
Department of Interior
Secretary of Interior

Bill Miller
Special Project Officer
Office of Tribal Reservation Development
Code 300, Room 4656
Bureau of Indian Affairs
1951 Constitution Avenue
Washington, D.C. 20245
(202) 343-2697

Principal Contact for
the Bureau of Indian Affairs

David Wright and Erv Edelman
Mail Stop 54-1
NASA-Lewis Research Center
21000 Brookpark Road
Cleveland, OH 44135
(216) 433-4000, ext. 6222 or ext. 5566

Principal Contacts for Technical Discussions

Jerry C. Elliott
Code LB
NASA-Johnson Space Center
Houston, Texas 77058
(713) 483-5226

Project Liaison and Principal Coordinator

Richard Band
Director
American Indian Studies
California State University at Long Beach
1250 Bellflower Blvd.
Long Beach, CA 90840
(213) 498-5293

Donna B. Hankins
Project Director
Remote Sensing and Technology Transfer Project
Center for Community Development
Graves Annex Bldg. (No. 30)
Humboldt State University
Arcata, CA 95521
(707) 826-3731

Wasyl Lew/Code ECS-4
ATS/CTS Program Manager
NASA Headquarters
Washington, D.C. 20546
(202) 755-3421

Point of Contact for Washington, D.C. Site

Brad Gibbs
NASA Ames Research Center
Moffett Field, California 94035
(415) 965-5001

Point of Contact for NASA Ames Research Center Moffett Field, CA Site

Appendix B - Organizational Participation

The following organizations were key participants in the demonstration activities:

Crow Tribe and Crow Central Education Committee and Northwestern Tribes

All Indian Pueblo Council, Inc. and Southwestern Tribes

National Aeronautics and Space Administration (NASA)

Department of Interior (DOI)

Bureau of indian Affairs (BIA)

United States Senate

United States House of Representatives

White House

Department of Agriculture (DOA)

Department of Health, Education, and Welfare (HEW)

Humboldt State University, Arcata, California

California State University at Long Beach, California

Office of Governor of Montana